

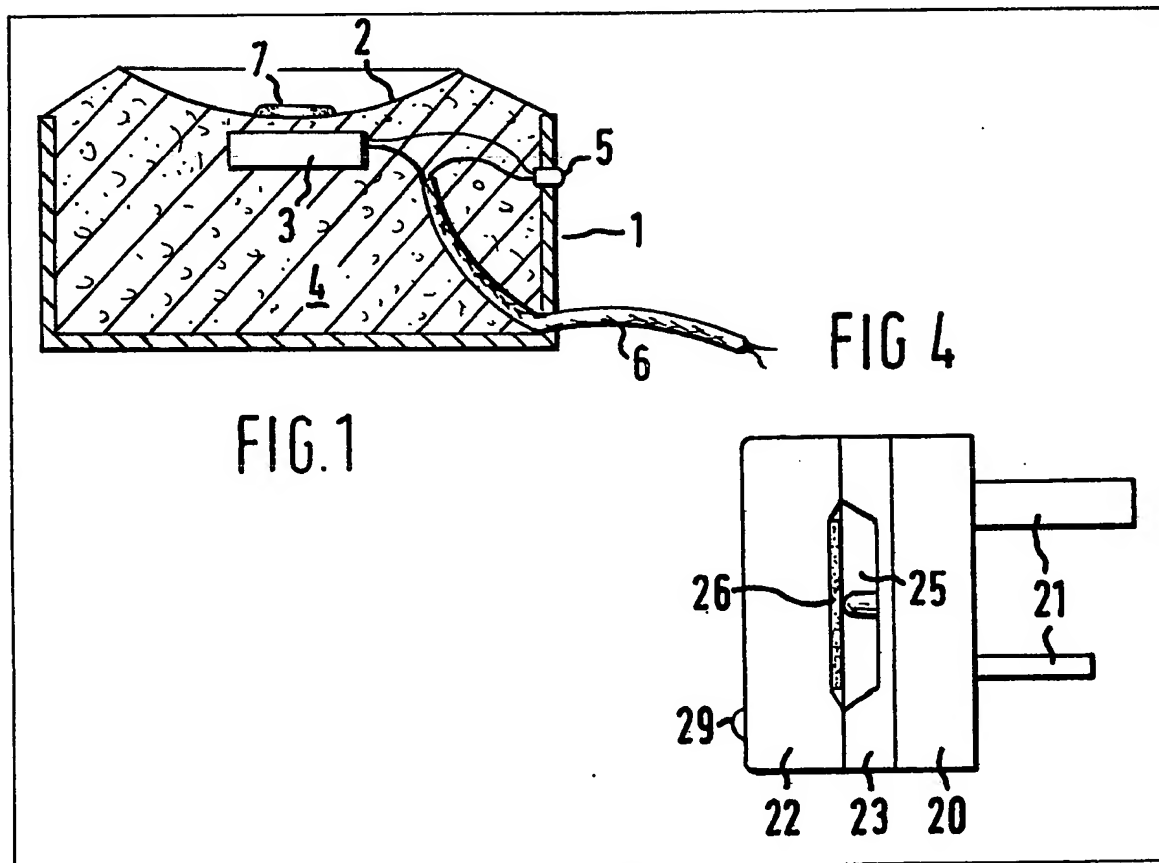
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(54) Air freshening devices

(57) An air freshening unit (Fig. 1) comprises an electrically heated 3 surface maintained at 60-70°C and defining a receptacle 2 onto which a small pool of a fragrant oil is dispensed. The surface may define the top of an electrical plug. Alternatively, an air freshening unit (Fig. 4) in the form of a plug may incorporate an electrical heater for heating an impregnated tablet 26 in a slideway through the plug, a vertical air passage leading convective air past a tablet in the slideway as it becomes heated by the heater.



1/2

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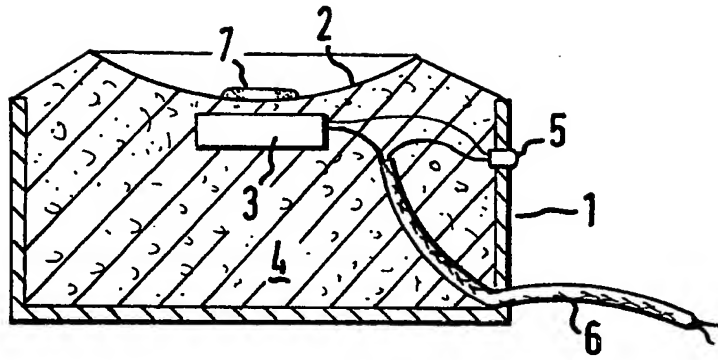


FIG. 1

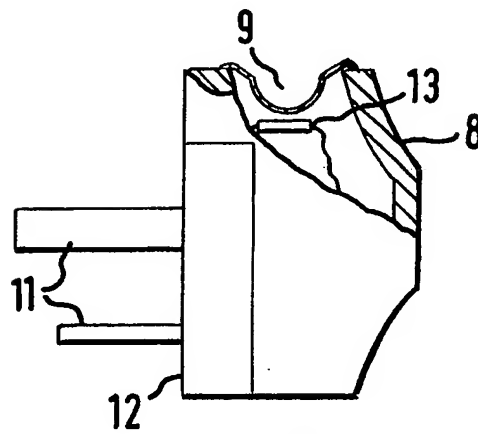


FIG. 2

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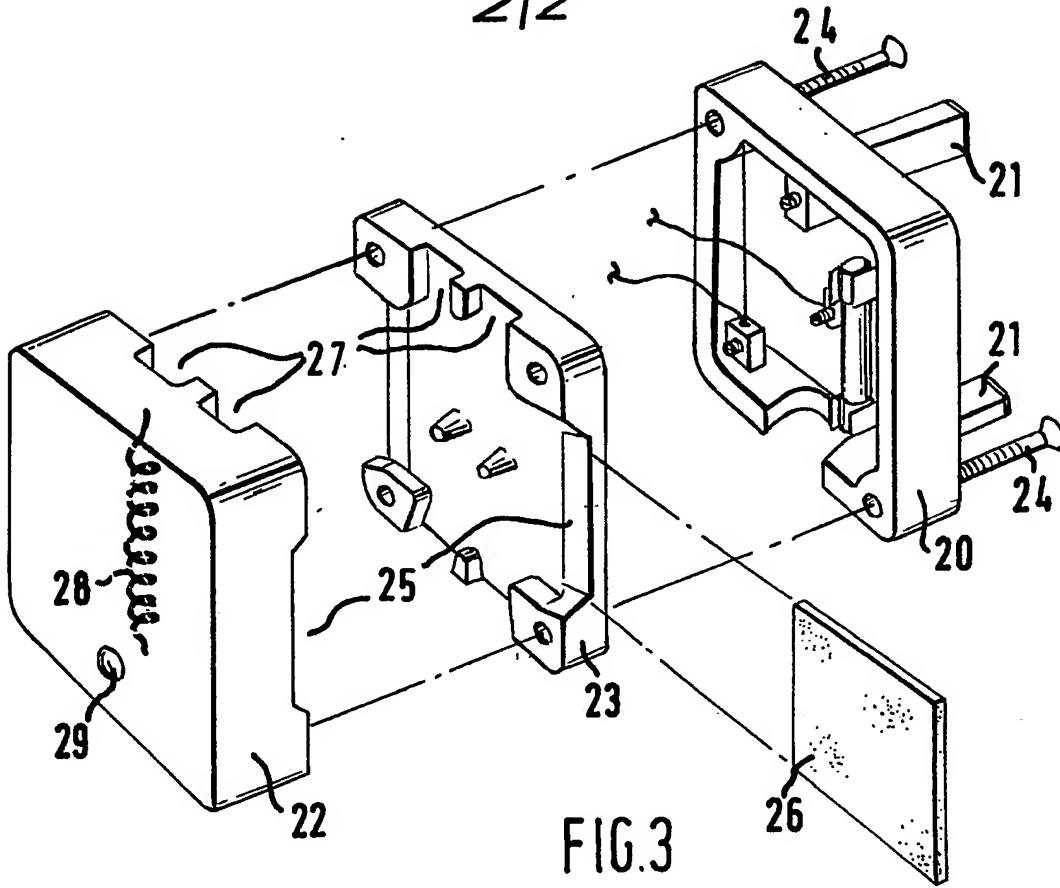


FIG. 4

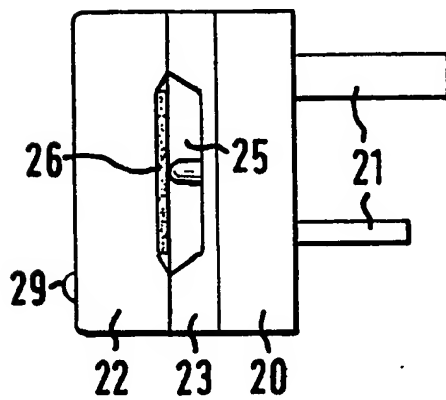
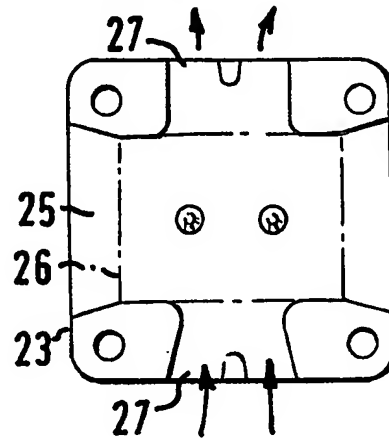


FIG. 5



## SPECIFICATION

### Improved air freshening apparatus

- 5 This invention relates to an air freshening apparatus.

According to this invention, air freshening apparatus comprises a heating element concealed in a housing that presents on its top surface a shallow receptacle that in use is maintained at 60-70°C by the heater and is adapted to contain 0.25-0.5 ml of fragrant oil as a pool having a surface area of 1-5 cm<sup>2</sup>.

Preferably, the receptacle comprises a metal, glass or ceramic bowl. The receptacle is preferably disposed in a mounting in which the heater is also disposed. The mounting may comprise an electric plug such as a 3 pin mains plug. The receptacle may be located in the upper surface of the cover of the plug, the latter being composed of a ceramic or other heat resistant material. The cover of the plug may be embellished with an ornate pattern.

The heater is preferably located below the receptacle.

15 The heater may comprise a resistive heating element or a light bulb. A heating element may have a power of 1-4w. The heater may be insulated from the mounting by means of air ducts.

The mounting may be composed of a ceramic or plastics material such as synthetic marble or metal or glass.

An on-off indicator such as a light emitting diode may be provided in the mounting.

Apparatus in accordance with this invention may be used to vapourise fragrant oils such as extracts from flowers, herbs and trees or oils from synthetic sources. Use of apparatus in accordance with this invention may be used to impart a pleasant fragrance to the air in a room or to remove or mask unwanted odours such as cooking smells or for disinfectant or decongestant or other medicinal purposes, or to kill insects by use of an insecticide. Use of this apparatus avoids the occasionally irritant effects of burning incense and is more economical than the latter. Air freshening apparatus may preferably comprise apparatus as described above together with a supply of fragrant medicinal oil, or insecticide.

The invention further comprises a method of dispersing a fragrant oil which comprises dispensing about 0.25-0.5 ml of the oil onto a receptacle to form a pool having a surface area of from 1-5cm<sup>2</sup> and maintaining the pool of oil at 60-70°C while permitting air to flow over it.

55 In another aspect the invention comprises an air freshening unit in the form of an electrical plug comprising a plug body having pins extending therefrom for engagement in a socket and in portions of the plug body electrically isolated from the pins a horizontal slideway for tablets impregnated with a volatile material, a vertical passage intersecting the slideway for convective flow of air past a tablet in the slideway and a heater for heating the tablet in the slideway.

65 Various embodiments of the invention will now be

described by way of example only with reference to the accompanying drawings, in which:-

Figure 1 is a cross-sectional view of a table-top air freshening unit according to the invention;

70 Figure 2 is a partial cross-section of a first type of combined air freshening unit and electric plug; and Figures 3-5 are respectively an exploded, side and diagrammatic front view of a second type of combined air freshening unit and electric plug.

75 In Figure 1, a base 1 of overall diameter about 5-10 cms and height 3-5 cms supports a metal bowl 2. A resistive heating element 3 of power 1-4 W disposed below the bowl 2 is supported by heat-resistant foamed material 4 contained in the base or mounting 1. Electrical connection is by a cable 6 and an on-off indicator is provided at 5.

In use of the apparatus the electrical power is switched on and about 0.25 to 0.5 ml of perfume oil 7 is placed in the bowl 2 where it spreads so as to occupy an area of 1-5 cm<sup>2</sup>. The heat provided by the element 3 causes the oil 7 to vapourise at a maintained temperature of 60-70°C, perfuming the surrounding air.

The particular construction of Figure 1 can of course be modified without departing from the invention. Thus the bowl 2 and vertical wall of the base 1 could be replaced by a one piece integral structure in a ceramic material having a central recess for a heating element adhered beneath the bowl with the base of the structure being closed off by a simple plate. An apertured cover could be provided to fit removeably over the bowl while admitting a flow of air from and to it.

In Figure 2 there is shown an electric plug 12 adapted in accordance with this invention. The plug is similar to a conventional mains plug and has three pins 11. The casing 8 of the plug is composed of heat resistant ceramic material and incorporates a metallic bowl 9 below which is provided an electrical heating element 13. The plug may be provided with an on-off switch (not shown) or an indicator light (not shown).

In Figures 3-5 an electric plug has a base 20 provided with three pins 21, a lid 22 and a heat barrier plate 23 between the lid and the base. The lid, barrier plate and base are held together by screws 24 and the lid and barrier plate together define a horizontal slideway 25 for an impregnated paper tablet 26 and vertical air flow passages 27 that intersect the slideway 25. In the lid is provided a heating element 28 connected to the live and earth pins and a light emitting diode 20 to show when the element 28 is working. In use the element 28 heats the tablet 26 to cause release of volatile perfume therein into the convective air flow in passages 27. When one tablet 26 is spent, a fresh one is introduced into the slideway 25 and pushes out the spent one.

### CLAIMS

125 1. An air freshening unit comprising a heating element concealed in a housing that presents on its top surface a shallow receptacle that in use is maintained at 60-70°C by the heater and is adapted to contain 0.25-0.5 ml of fragrant oil as a pool having a surface area of 1-5 cm<sup>2</sup>.

2. An air freshening unit according to claim 1 wherein, the heating element is an electrical resistance heater of power 1-4W.

5 3. An air freshening unit in the form of an electrical plug comprising a body having pins extending therefrom for engagement in a socket, a receptacle in a surface that is horizontal when the plug is engaged in its socket to receive a small quantity of a perfume oil and an electrical heater in  
10 the body arranged to maintain the bowl at a temperature of from 60-70°C.

4. An air freshening unit in the form of an electrical plug comprising a plug body having pins extending therefrom for engagement in a socket and  
15 in portions of the plug body electrically isolated from the pins a horizontal slideway for tablets impregnated with a volatile material, a vertical passage intersecting the slideway for convective flow of air past a tablet in the slideway and a heater for heating  
20 the tablet in the slideway.

5. An air freshening unit according to claim 4, wherein the plug body comprises a base from which the pin extends, a lid and a plate of heat resistant material that fits between the base and the lid, said  
25 heater being located in the lid and the slideway and air flow passage being defined by adjoining portions of the lid and plate.

6. An air freshening unit substantially as hereinbefore described with reference to and as illustrated  
30 in Figure 1 or 2 or 3-5 of the accompanying drawings.

7. A method of dispersing a fragrant oil which comprises dispensing about 0.25-0.5 ml of the oil onto a receptacle to form a pool having a surface  
35 area of from 1-5cm<sup>2</sup> and maintaining the pool of oil at 60-70°C while permitting air to flow over it.

New claims or amendments to claims filed on 20 June 1983.

40 Superseded claims 1-4

1. An air freshening unit comprising a heating element having a power consumption of less than 10  
45 watts concealed in a squat closed housing base portions of which are flat so that the housing can stand on a flat surface, a shallow receptacle devoid of sharp angulations in the top surface of the housing for receiving a pool of 0.25 to 0.50 ml of  
50 fragrant oil as a pool having a surface area of 1-5 cm, the power output of the heater and its relationship to the receptacle being arranged so that the oil is maintained at 60-70°C while power is applied to the heating element.

2. An air freshening unit in the form of an  
55 electrical plug comprising a body having pins extending therefrom for engagement in a socket, a receptacle in the top surface of the plug that is horizontal when the plug is engaged in the socket, the receptacle being adapted to receive 0.25-0.5 ml  
60 of fragrant oil as a pool having a surface area of 1.5 cm and an electrical heater in the plug body having a power output of less than 10 watts and  
arranged relative to the receptacle so that when the  
plug is inserted in the socket so that power is applied  
65 to the heater the oil is maintained at a temperature of

60-70°C.

3. An air freshening unit in the form of an electrical plug comprising a plug body having pins  
70 extending therefrom for engagement in a socket and in portions of the plug body electrically isolated from the pins a horizontal slideway for tablets impregnated with a volatile material, a passage extending generally vertically to intersecting the slideway for  
75 convective flow of air past a tablet in the slideway and a heater for heating the tablet in the slideway.

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